Application No. 09/599,036
Attorney Docket No. 22-0134

REMARKS

The present application includes claims 1-25. Claims 12 and 23 were objected to by the Examiner. Claims 1-11, 13-22, and 24-25 were rejected. By this Amendment, claim 15 has been amended, claims 12 and 23 have been cancelled, and new claims 26-27 have been added.

Claims 1-8 and 13-16 were rejected under 35 U.S.C. § 102(e) as being anticipated by Takahashi et al., U.S. Patent No. 6,275,518.

Claims 9-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi.

Claims 17-22 and 24-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi in view of Martin et al., U.S. Patent No. 6,061,562.

Claims 12 and 23 were objected to as being dependent upon a rejected base claim, but the Examiner indicated that claims 12 and 23 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 12 and 23 have been rewritten in independent form as new claims 26 and 27 as per the Examiner's instructions. Claims 12 and 23 have been canceled.

By this Amendment, claim 15 has been amended to correct a typographical error. No substantive amendment has occurred with respect to claim 15.

The Applicant first turns to the rejection of claims 1-8 and 13-16 under 35 U.S.C. § 102(e) as being anticipated by Takahashi. Takahashi relates to a frequency hopping radio LAN system and frequency hopping control method. Takahashi relates to the communication between two base station terminals and several radio terminals located in two overlapping cells using frequency hopping patterns (col. 7, lines 7-14 and 43-47). That is, each cell is assigned a frequency hopping pattern for communication between a base station terminal and radio terminals located within that cell (col. 7, lines 43-60). The frequency hopping pattern is a predetermined order of frequencies to be used by a base station terminal to communicate with radio terminals located in a cell (col. 7, lines 43-60). For example, a base station terminal A may use frequencies f0, f1, f2, f3, and f4 each for a given time period, then switch to the next frequency in the order (Figure 2A). Simultaneously, a second base station terminal, base station terminal B, uses the same set of frequencies, namely f0, f1, f2, f3, and f4, each individually utilized for the same given time period, but never at the same time as base station terminal A (Figure 2B).

For example, as shown in Figure 2B of Takahashi, for a first time period a cell A is assigned a frequency f0 and a cell B is assigned a frequency f2. At the start of a second time period, cell A is assigned a frequency f1 while cell B is assigned a frequency f3. At the start of the third time period, cell A is assigned a frequency f2 while cell B is assigned a frequency f4. This frequency hopping continues even after each cell has been assigned each of the available frequencies. For example, as shown in Figure 2B of Takahashi, at the start of the sixth time period, cell A is assigned frequency f0 again. In

this way, the assignment of frequencies repeats itself for a given cell once all the available frequencies in the frequency hopping pattern have been assigned to a cell.

Therefore, Takahashi illustrates that base station terminal A and base station terminal B utilize the same frequencies to communicate with radio terminals located in their respective cells, but at different time periods to avoid using the same frequency in adjacent or overlapping cells (col. 7, lines 43-60; Figure 2B). As a result, for example, at an initial point in time, base station terminal A may be using frequency f2 to communicate with a radio terminal in a cell while base station terminal B uses frequency f4 to communicate with a radio terminal in an adjacent cell (col. 7, lines 43-60; Figure 2B). At a later time, base station terminal A may be using frequency f3 to communicate with a radio terminal in a cell while base station terminal B uses frequency f0 to communicate with a radio terminal in an adjacent cell (col. 7, lines 43-60; Figure 2B).

Therefore, Takahashi merely uses a hopping frequency pattern for assigning a communication frequency to a cell for a given time period to avoid simultaneous use of the same frequency in adjacent or overlapping cells (col. 7, lines 43-60; Figure 2B). That is, Takahashi does not teach a transition between two different hop cycles by transmitting downlink beam energy to transition cells according to a transition hop cycle. Takahashi merely uses two cells hopping between frequencies contained in a set of frequencies at different times (col. 7, lines 43-60; Figure 2B) to prevent the simultaneous assignment of an identical communication frequency for adjacent cells. Therefore, the use of a transition hop cycle for transitioning between a first hop cycle and a second hop cycle is

not taught by Takahashi. In addition, transition cells supported by a transition hop cycle for transitioning between a first hop cycle and a second hop cycle are also not taught by Takahashi. Furthermore, Takahashi does not consider or mention any sort of transition hop cycle or the use of transition cells, as recited in independent claims 1 and 7 in the present application.

Takahashi does not teach the transmitting of transition downlink beam energy for transition cells according to a transition hop cycle for transitioning between the first hop cycle and the second hop cycle. Takahashi has only one hop cycle, not two or more. Additionally, because Takahashi has only a single hop cycle, Takahashi does not teach transitioning between hop cycles. This limitation is recited in Applicant's independent claim 1.

In addition, Takahashi does not teach a variable hop cycle beam laydown comprising transition cells supported by a transition hop cycle for transitioning between the first hop cycle and the second hop cycle. This limitation is recited in Applicant's independent claim 7.

The present rejection encompasses independent claims 1 and 7. Claim 1 includes the limitation of transmitting transition downlink beam energy for transition cells according to a transition hop cycle for transitioning between the first hop cycle and the second hop cycle. Claim 7 includes the limitation of transition cells supported by a transition hop cycle for transitioning between the first hop cycle and the second hop cycle. Therefore, the Applicant respectfully submits that claims 1 and 7 include

limitations that are not taught by Takahashi. Consequently, the Applicant respectfully submits that independent claims 1 and 7 and corresponding dependent claims 2-6, 8, and 13-16 are allowable.

The Applicant now turns to the rejection of claims 9-11 under 35 U.S.C. § 103(a) as being unpatentable over Takahashi. As respectfully submitted above, Takahashi does not teach or suggest the limitation of transition cells supported by a transition hop cycle for transitioning between the first hop cycle and the second hop cycle. Claim 7 recites the limitation of transition cells supported by a transition hop cycle for transitioning between the first hop cycle and the second hop cycle. Claims 9-11 depend from claim 7 and consequently include the limitations of claim 7. Consequently, Applicant respectfully submits that claims 9-11 are allowable.

The Applicant now turns to the rejection of claims 17-22 and 24-25 under 35 U.S.C. § 103(a) as being unpatentable over Takahashi in view of Martin. As discussed above, Takahashi does not teach or suggest a transition between two different hop cycles by transmitting downlink beam energy to transition cells according to a transition hop cycle. Consequently, Takahashi does not teach or suggest a waveform generator producing a transition downlink beam. In addition, Takahashi therefore does not teach or suggest directing a transition downlink beam between third feed paths to transition cells.

Martin relates to wireless communication using an airborne switching node. Specifically, Martin relates to an airborne switching node that uses a switch to couple data received from a first cell for transmission to a second cell (col. 1, lines 58-68). In addition, Martin uses a payload adapter that mechanically adjusts the orientation of an antenna to compensate for the movement of an aircraft relative to the cells (col. 2, lines 2-12).

However, Martin does not teach the limitation of a waveform generator producing a transition downlink beam. In addition, Martin does not teach the limitation of at least one switch directing a transition downlink beam between the third feed paths to transition cells. This limitation is recited in Applicant's independent claim 17. Moreover, there is no mention or use of a transition hop cycle or transition cells in Martin. This limitation is also recited in Applicant's independent claim 17. Therefore, Applicant respectfully submits that Martin does not overcome the shortcomings of Takahashi as described above.

Claim 17 recites the limitation of a waveform generator producing a transition downlink beam. In addition, claim 17 recites the limitation of at least one switch directing the transition downlink beam between third feed paths to transition cells. Neither Takahashi nor Martin teach or suggest the limitations recited in Applicant's independent claim 17. Consequently, Applicant respectfully submits that independent claim 17 and dependent claims 18-22 and 24-25 are allowable.

Therefore, the Applicant respectfully submits that the claims of the present application are allowable over the prior art.

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CONCLUSION

If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Account No. 13-0017.

Respectfully submitted,

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